

## A revision of the genus *Oxyssomatium* Railliet & Henry, 1916 (Nematoda, Cosmocercoidea)

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**Résumé.** — Révision du genre *Oxyssomatium* Railliet & Henry, 1916 (Nematoda, Cosmocercoidea). — Le genre *Neoxyssomatium* Ballesteros-Márquez, 1945, est synonyme d'*Oxyssomatium* Railliet & Henry, 1916; ces deux genres ont la même espèce-type. *Oxyssomatium* comprend trois espèces : *O. brevicaudatum* (Zeder, 1800) [= *O. contortum* (Linstow, 1906) Baylis, 1927; = *O. longispiculum* Railliet & Henry, 1916; = *O. caucasicum* (Sharpilo, 1974) n. comb. [= *Neoxyssomatium caucasicum* et *O. dollfusi* n. sp. *O. dollfusi* se distingue des autres espèces par les dimensions et la morphologie des spicules et par la répartition géographique. Toutes les autres espèces classées précédemment dans ce genre doivent être assignées à des genres différents. La femelle d'*Oxyssomatium waltoni* Skrjabin, Schikhobalova & Mozgovoi, 1951, est inconnue et cette espèce est laissée incertae sedis. *Oxyssomatium dogieli* Skrjabin, 1916, est *species dubia*. *O. tibetanum* Baylis, 1927, est transféré dans le genre *Cosmocercoidea* et *O. baylisi* Walton, 1933, est transféré dans le genre *Raillietinema*. *Oxyssomatium georgianum* Reiber, Byrd & Parker, 1940, est un synonyme de *Cosmocercoidea dukae* (Holl).

**Abstract.** — The genus *Neoxyssomatium* Ballesteros-Márquez, 1945, is shown to be synonymous with *Oxyssomatium* Railliet & Henry, since the type species are the same. *Oxyssomatium* contains only the three following species : *O. brevicaudatum* (Zeder, 1800) [= *O. contortum* (Linstow, 1906) Baylis, 1927; = *O. longispiculum* Railliet & Henry, 1916; = *O. caucasicum* (Sharpilo, 1974) n. comb. [= *Neoxyssomatium caucasicum*]; *O. dollfusi* n. sp. *O. dollfusi* differs from the other two species in the size and morphology of the spicules and in geographical distribution. All other species previously assigned to *Oxyssomatium* belong in other genera. *Oxyssomatium waltoni* Skrjabin, Schikhobalova & Mozgovoi, 1951, is known only from males and it is left incertae sedis. *Oxyssomatium dogieli* Skrjabin, 1916, is designated a *species dubia*. *O. tibetanum* Baylis, 1927, is transferred to *Cosmocercoidea* and *O. baylisi* Walton, 1933, is transferred to *Raillietinema*. *Oxyssomatium georgianum* Reiber, Byrd & Parker, 1940, is a synonym of *Cosmocercoidea dukae* (Holl).

There has been much confusion concerning genera in the Subfamily Cosmocercoinae (Cosmocercoidea). *Cosmocerca*, *Cosmocerella* and *Cosmocercoidea* are easily recognized by their distinctive male caudal papillae and *Raillietinema* by its relatively large eggs which are always few in number in the uteri. However, *Oxyssomatium*, *Neoxyssomatium* and *Aplectana* are not easily differentiated and numerous different diagnoses have been proposed by various authors. Important characters have not been described in many species. A revision of this complex of genera has been undertaken and specimens of numerous species have been examined. In the present study the genera *Oxyssomatium* and *Neoxyssomatium* are revised; *Aplectana* will be similarly treated in a separate publication.

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MATERIALS AND METHODS : Specimens were borrowed from various institutions. The following abbreviations have been used : BM, British Museum (Natural History) ; CIH, Commonwealth Institute of Helminthology ; ZMB, Zoologischen Museums Berlin ; MNHN, Muséum national d'Histoire naturelle ; USNM, United States National Museum.

## RESULTS

The first publication of the name *Oxysomatium* was in a footnote in a paper by RAILLIET & HENRY which was presented at a conference in 1913 but not published until 1914. In the published text *Oxysomatium lepturum* was briefly mentioned as a species possessing a preanal sucker. This cannot be considered a valid proposal of the generic name *Oxysomatium*. The name *Oxysomatium* was not formally proposed as a replacement name for *Oxysoma* Schneider, 1866 (preoccupied), until RAILLIET & HENRY (1916a) clearly stated that *Oxysomatium brevicaudatum* (Zeder, 1800) [= *Fusaria brevicaudata* Zeder] was the type species of *Oxysomatium* Railliet & Henry, 1913. It is likely from the introduction to this 1916a article that RAILLIET & HENRY knew as early as 1913 that *Oxysoma* was preoccupied and they decided then on *Oxysomatium* as a replacement name. This explains the apparently anomalous reference to the name *Oxysomatium* in their 1914 paper. The correct author and date citation should be *Oxysomatium* Railliet & Henry, 1916.

The genus *Neoxysomatium* Ballesteros-Márquez, 1945, was established with *Fusaria brevicaudata* [= *Oxysomatium brevicaudatum* (Zeder, 1800) Railliet & Henry, 1916] as type species. BALLESTEROS-MÁRQUEZ believed at that time that *Oxysomatium longepiculum* Railliet & Henry, 1916, and *Fusaria brevicaudata* Zeder were separate species. As shown below this is incorrect and *Neoxysomatium* is a synonym of *Oxysomatium*.

### EMENDED DIAGNOSIS OF *Oxysomatium*

*Oxysoma* Schneider, 1866 (preoccupied).

*Neoxysomatium* Ballesteros-Márquez, 1945.

Cosmocercinae sensu Chabaud, 1978, Cosmocercidae, Cosmoceroidea, Ascaridida. Tail of male lacking rosettes or plectanes. Somatic papillae and lateral alae present. Uteri with numerous thin-shelled, relatively small eggs. Ovary of anterior uterus located just posterior to vulva, ovary of posterior uterus located well anterior to vulva.

TYPE-SPECIES : *Oxysomatium brevicaudatum* (Zeder, 1800) Railliet & Henry, 1916.

*Oxysomatium* most closely resembles *Aplectana*. These genera may be differentiated by the location of the two ovaries. In *Aplectana* both are anterior to the vulva, whereas in *Oxysomatium* the ovary connected to the anterior uterus is posterior to the vulva. For this character *Aplectana* has been described as "prodelphic" and *Oxysomatium* as "amphidelphic" (see CHABAUD, 1978). This terminology is not followed herein because of ambiguity in the definition of the terms. For example, in the original definition proposed by SEURAT (1920), one of the examples given of an amphidelphic species, namely *Haemonchus* (Trichostrongyloidea), is in its arrangement of uteri and ovaries similar to *Aplectana*.

## SPECIES

1. *Oxysomatum brevicaudatum* (Zeder, 1800) Railliet & Henry, 1916

*Fusaria brevicaudata* Zeder, 1800.

*Ascaris brevicaudata* (Zeder, 1800) Rudolphi, 1802.

*Oxyuris brevicaudata* (Zeder, 1800) Dugès, 1826, nec Dujardin, 1845.

*Heteracis brevicaudata* (Zeder, 1800) Diesing, 1861, nec Dujardin, 1845.

*Oxysoma brevicaudata* (Zeder, 1800) Schneider, 1866.

*Aplectana brevicaudata* (Zeder, 1800) Railliet & Henry, 1916.

*Aplectana brevicaudata* (Zeder, 1800) Railliet & Henry, 1916.

*Neoxysomatum brevicaudatum* (Zeder, 1800) Ballesteros-Márquez, 1945.

*Oxysomatum longespiculum* Railliet & Henry, 1916.

*Oxysoma contortum* Linstow, 1906.

*Oxysomatum contortum* (Linstow, 1906) Baylis, 1927.

*Aplectana contorta* (Linstow, 1906) Yorke & Maplestone, 1926.

*Neoxysomatum contortum* (Linstow, 1906) Ballesteros-Márquez, 1945.

## REDESCRIPTION (figs. 1-2)

Lateral alae narrow, somatic papillae not numerous. Cuticle of body with inconspicuous transverse striations approximately 3.5  $\mu$ m apart. Oral opening triangular, lips large. Cephalic papillae include 6 small labial papillae and six cephalic papillae of which the submedian pair is markedly small. Anterior extremity of oesophagus with three tooth-like projections covered with thick cuticle.

*Male* (*Bufo*, Denmark, 5 specimens) : Total length 5.0-6.9 mm. Length of oesophagus 750-878  $\mu$ m (pharyngeal portion 53-69  $\mu$ m, posterior portion of corpus 566-666  $\mu$ m, isthmus 31-41  $\mu$ m, and bulb 97-109  $\mu$ m). Nerve ring 356-422  $\mu$ m and excretory pore 447-563  $\mu$ m from anterior extremity. Tail 153-172  $\mu$ m long, tapering rapidly to long pointed terminal portion. Anus wide, opening onto marked swelling on ventral surface. Lateral alae extending from about 100  $\mu$ m anterior to anus to mid-region of oesophagus. Caudal papillae larger than somatic papillae. Posterior half of tail with two large subventral and two large subdorsal pairs of papillae; subventral pairs often not aligned directly opposite each other. Anterior half of tail with three pairs of papillae; two pairs subventral, one pair sublateral. Anterior lip of anus with one unpaired papilla which is supported by a cuticular cup-shaped structure provided with laterally directed wing-like extensions just below the body cuticle. Preanal region with 7-9 pairs of large caudal papillae in two subventral rows; the three pairs closest to the anus are close together whereas the other papillae are more widely spaced. Spicules prominent, 1.4-2.0 mm in length. Shaft of spicules slender, with tubular central core and curved wing-like expansion on the ventral side. Proximal end of spicule blunt, distal end sharply pointed. Gubernaculum prominent, 113-119  $\mu$ m long, with wide proximal end and sharply pointed distal end.

*Female* (5 specimens) : Total length 6.3-8.2 mm. Length of oesophagus 882-1 154  $\mu$ m (pharyngeal portion 59-72  $\mu$ m, posterior portion of corpus 691-913  $\mu$ m, isthmus 34-41  $\mu$ m, and bulb 109-128  $\mu$ m). Nerve ring 400-484  $\mu$ m, excretory pore 513-669  $\mu$ m, and vulva 3.5-4.5 mm from anterior extremity. Vagina approximately 1.5 mm long, slender and

muscular throughout its length, directed anteriorly in first third and then flexed to posterior. Uteri opposed, ovary of posterior uterus located anterior to vulva, ovary of anterior uterus located posterior to vulva. Eggs oval, thin-shelled, 62-72  $\mu\text{m}$  long and 35-45  $\mu\text{m}$  wide (based on 5 specimens). Lateral alae extending from mid-region of tail to level of nerve ring. Tail 209-241  $\mu\text{m}$  long, conical, sharply pointed.

SPECIMENS EXAMINED : (1) ZMB 1027 (worms collected by SCHNEIDER (1866) from *R. temporaria* of Germany). (2) CIH 4567 (*R. temporaria*, England). (3) CIH 593/29 (*B. bufo*, London Zoo). (4) Frandsen Personal Collection Bbu 28 (*B. bufo*, Denmark). (5) CIH 805/30 (*O. apodus*, London Zoo). (6) BM 1923.8.28.87-91 (*A. fragilis*, *S. atra*, Europe). (7) BM 1923.12.19.82-91 (*S. maculosa*, Europe). (8) BM 1964.1601-1606 (*B. bufo*, Britain). (9) MNHN 7KA (*S. maculosa*, Corsica). (10) MNHN 418 NF (*R. dalmatina*, France).

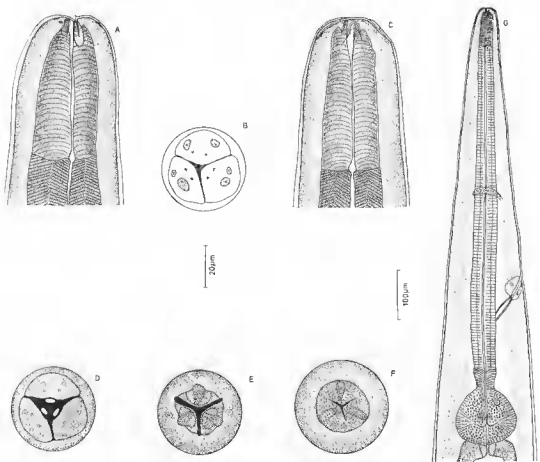


FIG. 1. — *Oxyssomatium brevicaudatum* (Zeder, 1800) Railliet & Henry, 1916. A, B, C, anterior extremity, lateral, apical and dorsal view; D, *idem*, optical section through lips; E, *idem*, section through base of lips; F, *idem*, section through anterior end of oesophagus; G, anterior end of male, lateral view.

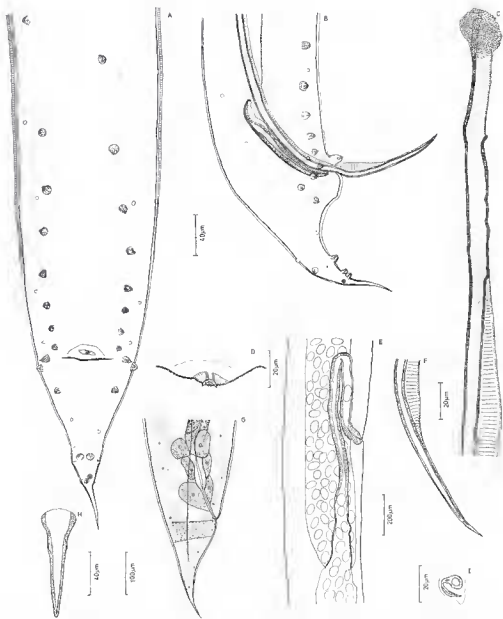


FIG. 2. — *Oxyosomatium brevicaudatum* [Zeder, 1800] Railliet & Henry, 1916. A, B, caudal end of male, ventral and lateral view; C, proximal end of spicule, lateral view; D, anterior lip of anus of male, ventral view; E, vagina, lateral view; F, distal end of spicule, lateral view; G, tail of female, lateral view; H, gubernaculum, dorsal view; I, shaft of spicule, transverse section.

**LOCALITY :** A type locality was not specified but ZEDER worked in Germany and it is probable that his specimens were from there. This species has been reported numerous times from many localities throughout Western Europe and Britain and as far to the east as Chelyabinsk, USSR (see fig. 3).



FIG. 3. — Locality records of *Oxyssomatium* spp.

[● = *O. brevicaudatum* (Zeder, 1800); ■ = *O. caucasicum* (Sharpilo, 1974) n. comb.; ▲ = *O. dollfusi* n. sp.].

**HOSTS :** *Rana arvalis*, *R. dalmatina*, *R. esculenta*, *R. graeca*, *R. macronemis*, *R. ridibunda*, *Hyla arborea*, *Pelobates fuscus*, *Alytes obstetricans*, *Salamandra salamandra* (= *S. maculosa*), *S. atra* (new host record), *Triturus alpestris*, *T. cristatus*, *T. vulgaris*, *Bufo bufo*, *B. regularis*, *B. viridis*, *Bombina bombina*, *Natrix natrix*, *Anguis fragilis*, *Ophisaurus apodus* (new host record).

## DISCUSSION

ZEDER (1800) described a cosmoceroid, *Fusaria brevicaudata*, from Western European amphibians. This species was redescribed by SCHNEIDER (1866) and placed in a new genus, *Oxyssoma*, with two other species. A type species was not designated. STILES & HASSALL (1905) suggested *Oxyssoma brevicaudata* (Zeder) be recognized as type species and since it has page priority in SCHNEIDER's publication, this proposal has been followed in later taxonomic studies. RAILLIET & HENRY (1916a) clearly indicated *Oxyssoma brevicaudata* (Zeder) as type species of *Oxyssomatium* and it is evident from this publication

that the authors believed that ZEDER's and SCHNEIDER's descriptions were of the same species. However, in a publication later the same year, RAILLIET & HENRY (1916b) indicated SCHNEIDER had examined a different species from ZEDER. They proposed ZEDER's species be placed in *Aplecta* (= *Aplectana*), and the type species of *Oxysonatium* was given as the description by SCHNEIDER under the new name *Oxysonatium longespiculum* (= *Oxysoma breviceaudatum* sensu Schneider, nec Zeder, nec Railliet & Henry, 1916a). Unfortunately, SCHNEIDER's description is incomplete by present standards and RAILLIET & HENRY did not provide an adequate redescription.

SCHNEIDER's original specimens (2 ♂ and 12 ♀) have been examined and compared with numerous cosmoceroids from various amphibians and reptiles. Both male worms are kathlanioids of the genus *Falcaustra* Lane, 1915 (= *Spironoura*) since the cephalic structures are typical of that genus, the œsophageal isthmus is swollen into a subspherical shape which is characteristic of many kathlanioids, and there is a shallow sucker on the ventral caudal surface<sup>1</sup>. The female worms are all of the Subfamily Cosmocerinae and they belong to *O. breviceaudatum* (Zeder).

HARTWICH (1975) also examined SCHNEIDER's specimens and he designated them syntypes of *O. longespiculum*. His redescription failed to demonstrate that the males and females are of different species. To conserve the much published name *Oxysonatium* one female worm (illustrated by HARTWICH, 1975, fig. 80c) is designated lectotype of *O. longespiculum*. This permits *O. longespiculum* to be synonymized with *O. breviceaudatum* (Zeder, 1800) Railliet & Henry, 1916a.

*Oxysoma contortum* Linstow, 1906, is treated herein as a synonym of *O. breviceaudatum*. Although the original description of *O. contortum* is not detailed, the presence of conspicuously elongate spicules and the illustration given of the short male tail is most similar to *O. breviceaudatum*. Also *O. contortum* was reported from *Bufo bufo*, a common host for *O. breviceaudatum*, in a locality (Balkans and Greece) where *O. breviceaudatum* has been reported. It is most unlikely that two different species with distinctively long spicules occur in the same host species in the same locality.

KHALIL (1932) reported *Aplectana contorta* in *Bufo regularis*<sup>2</sup> of Liberia, Africa. This is far from other locality reports of this species and it is likely that an error of identification was made. Similarly WALTON (1927) reported *Oxysonatium longespiculum* in a salamander from North America and this is a doubtful identification.

## 2. *Oxysonatium caucasicum* (Sharpilo, 1974) n. comb.

*Neoxysonatium caucasicum* Sharpilo, 1974.

*O. caucasicum* was described from *Anguis fragilis* in the Caucasus. Specimens are not available for study. This species cannot be distinguished from *O. breviceaudatum* in the morphology of the anterior extremity, shape of the male and female tail, number and distribution

1. These males probably belong to *Falcaustra armenica* (Massimo, 1924) which has a similar male caudal morphology and is the only *Falcaustra* sp. recorded from Western Europe. *F. armenica* is usually a parasite of freshwater turtles and it may be rare in anuran amphibians.

2. "*Bufo regularis*" of Africa is a complex of several closely related species of *Bufo*.

of caudal papillae in males, size of the gubernaculum, and morphology of the spicules. Also *O. brevicaudatum* has been reported from a frog in the Caucasus and it is a common parasite of *A. fragilis* in western Europe. The reported difference between these species in gubernaculum shape when viewed dorsally seems to be slight. The male tail in both species is relatively thick in the anal region and in specimens of *O. brevicaudatum* examined in the present study a clear dorsal view of the gubernaculum was obtained only by dissection of a worm. *O. caucasicum* and *O. brevicaudatum* differ significantly only in the length of the spicules. These were recorded as 380-400  $\mu$ m long in *O. caucasicum*. In comparison spicule length in *O. brevicaudatum* is usually recorded as being at least 1.0 mm and this was confirmed in specimens examined in the present study. Only CHABAUD & CAMPANA-ROUGER (1955) have observed male *O. brevicaudatum* with shorter spicules; they described a small worm from *Alytes obstetricans* of southern France with spicules 750  $\mu$ m long. The difference in spicule length between *O. caucasicum* and *O. brevicaudatum* is nevertheless so great that designation of these species as synonymous must await the study of more material from southwestern Russia. *O. caucasicum* may be a subspecies of *O. brevicaudatum*.

### 3. *Oxysomatium dollfusii* n. sp.

#### DESCRIPTION (fig. 4)

Lateral alae narrow. Somatic papillae not numerous. Oral opening triangular, lips large. Cephalic papillae include six minute labial papillae and six cephalic papillae of which the submedian pair is markedly small. Anterior extremity of oesophagus with three tooth-like projections covered with thick cuticle.

*Male* (holotype): Total length 4.8 mm. Length of oesophagus 651  $\mu$ m (pharyngeal portion 51  $\mu$ m, posterior portion of corpus 463  $\mu$ m, isthmus 39  $\mu$ m, and bulb 98  $\mu$ m). Nerve ring 275  $\mu$ m and excretory pore 402  $\mu$ m from anterior extremity. Tail 137  $\mu$ m long, tapering rapidly to long pointed terminal portion. Anus opening to exterior on the apex of a marked swelling. Lateral alae extending from 500-600  $\mu$ m anterior to anus to mid-region of oesophagus. Caudal papillae markedly larger than somatic papillae. Posterior half of tail with two large subventral and two large subdorsal pairs of papillae; subventral pairs often not aligned directly opposite each other. Anterior half of tail and anal region with three pairs and one unpaired large papillae; three pairs located subventrally around base of swelling onto which anus opens, and unpaired papilla on anterior lip of anus. Unpaired papilla with cuticular wing-like supports as observed in the type species. Preanal region with 8-9 pairs of large papillae in two subventral rows; the 4 pairs closest to the anus are close together whereas the other papillae are more widely spaced and the pairs are often not aligned directly opposite each other. Spicules prominent, 192  $\mu$ m long, hook-shaped in lateral view, shaft divided into robust anterior third and more weakly chitinated posterior part supported by a wide membranous sheath. Distal end of spicules sharply pointed. Gubernaculum prominent, 78  $\mu$ m long, with wide proximal end and sharply pointed distal end.

*Female* (allotype): Total length 5.0 mm. Length of oesophagus 780  $\mu$ m (pharyngeal portion of corpus 58  $\mu$ m, posterior portion of corpus 555  $\mu$ m, isthmus 55  $\mu$ m, bulb 112  $\mu$ m).



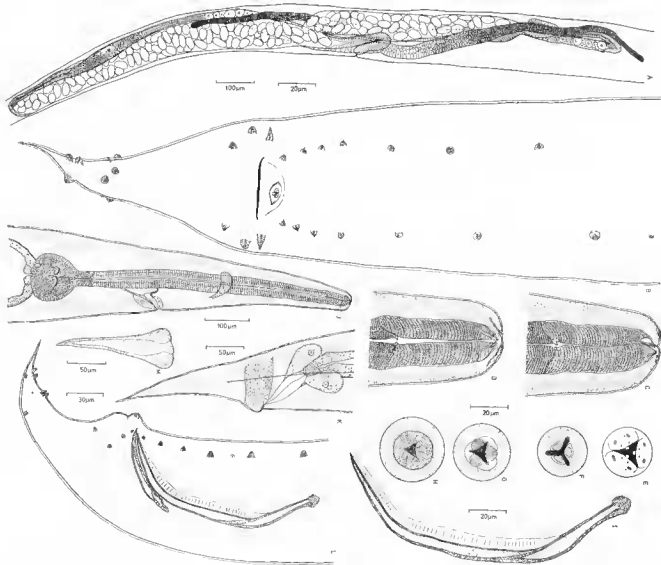


FIG. 4. — *Oxysonmatium dollfusi* n. sp. A, reproductive system of female, lateral view; B, caudal end of male, ventral view; C, D, E, caudal extremity, lateral, dorsal and apical view; F, *idem*, section through base of hips; G, section through buccal cavity; H, section through anterior end of oesophagus; I, spicule, lateral view; J, anterior end of male, lateral view; K, tail of female, lateral view; L, caudal end of male, lateral view; M, gubernaculum, dorsal view.

Nerve ring 320  $\mu\text{m}$ , excretory pore 453  $\mu\text{m}$ , and vulva 2.8 mm from anterior extremity. Ovary of posterior uterine located anterior to vulva, terminal half of ovary of anterior uterus located posterior to vulva. Eggs oval, thin-shelled, 69-78  $\mu\text{m}$  long and 40-45  $\mu\text{m}$  wide (based on five specimens). Lateral alae extending from anterior third of tail to mid-region of oesophagus. Tail 208  $\mu\text{m}$  long, conical, sharply pointed, with slight swelling near posterior lip of anus.

**Paratypes :** Dimensions of 5 male and 4 female paratypes are as follows. **Males :** 4.2-5.1 mm long; oesophagus 622-724  $\mu\text{m}$  long (pharyngeal portion 48-65  $\mu\text{m}$ , posterior portion of corpus 443-530  $\mu\text{m}$ , isthmus 39-45  $\mu\text{m}$ , bulb 87-96  $\mu\text{m}$ ); nerve ring 287-315  $\mu\text{m}$ , excretory pore 410-475  $\mu\text{m}$  from anterior extremity; spicules 183-208  $\mu\text{m}$ , gubernaculum 75-86  $\mu\text{m}$ , and tail 134-156  $\mu\text{m}$  long. **Females :** 4.7-5.0 mm long; oesophagus 738-767  $\mu\text{m}$  long (pharyngeal portion 56-65  $\mu\text{m}$ , posterior portion of corpus 530-545  $\mu\text{m}$ , isthmus 37-60  $\mu\text{m}$ , bulb 105-112  $\mu\text{m}$ ); nerve ring 275-335  $\mu\text{m}$ , excretory pore 440-462  $\mu\text{m}$ , and vulva 2.5-2.9 mm from anterior extremity; tail 186-220  $\mu\text{m}$  long.

**SPECIMENS EXAMINED :** (1) MNHN 1090 BA (type specimens from *Bufo mauritanicus*). (2) MNHN 492 A (*D. pictus*).

**LOCALITY :** The type locality is Casablanca, Morocco. All specimens were from there.

**HOSTS :** *Bufo mauritanicus*, *Discoglossus pictus*.

## DISCUSSION

*O. dollfusi* n. sp. can be most easily differentiated from the other two species in the genus by spicule morphology and length. In both *O. caucasicum* and *O. brevicaudatum* the spicules are relatively long ( $> 350 \mu\text{m}$ ) whereas in *O. dollfusi* they are less than 225  $\mu\text{m}$  in length. The spicule shaft in *O. dollfusi* forms a robust anterior portion and a less heavily chitinized posterior portion which is surrounded by a wide transparent membrane. In the other two species the shaft of the spicules is uniform in appearance throughout its length and it is greatly elongated. The membranous sheath observed around the posterior two-thirds of the shaft in *O. dollfusi* surrounds almost the entire length of the shaft in *O. brevicaudatum* and *O. caucasicum*. Finally, the spicules in *O. dollfusi* are bent into a characteristic hook shape in lateral view whereas they are slightly curved or variable in shape in the other two species.

## OTHER SPECIES ASSIGNED TO *Oxysomatium*

A number of species described originally under the generic name *Oxysomatium* were subsequently transferred to other genera i.e. *Aplectana chamaeleonis* (Baylis, 1929) Travassos, 1931; *Aplectana hylambatis* (Baylis, 1927) Travassos, 1931; *Aplectana bonariensis* (Gutierrez, 1945) Leht & Freitas, 1948; *Aplectana mexicana* (Caballero, 1933) Ballesteros-Márquez, 1945; *Falcaustra inglisi* (Anderson, 1964) Baker, 1980. The present study confirms these changes. *Oxysomatium ranae* Walton, 1941, and *Oxysomatium georgianum* Reiber, Byrd & Parker, 1940, belong in *Aplectana* as will be discussed in a separate publication. Similarly, *Oxysomatium srinagarensis* Fotedar, 1960; *Oxysomatium anurae* Bis-

was & Chaturvedi, 1963; *Oxysomatium stomatoci* Biswas & Chaturvedi, 1963; *Oxysomatium brevispiculum* Yuen, 1965; *Neoxysomatium longicaudatum* Ali & Ilyas, 1969; *Oxysomatium punctatum* Walton, 1933; *Oxysomatium minutum* Rasheed, 1965, are all shown to be synonymous with various *Aplectana* spp.

The original description of *Oxysomatium waltoni* Skrjabin, Schikhobalova & Mozgovoi, 1951 [= *Aplectana mexicana* Walton, 1940, preoccupied; = *Aplectana waltoni* (Skrjabin, Schikhobalova & Mozgovoi, 1951) Skrjabin, Schikhobalova & Lagodovskaya, 1961] is inadequate and females are not known. This species is left *incertae sedis*.

The original description of *Oxysomatium dogieli* Skrjabin, 1916 [= *Oxysoma dogieli* Skrjabin, 1916, *lapsus calami*; = *Aplectana dogieli* (Skrjabin, 1916) Yorke & Maplestone, 1926] lacks details and the host (from East Africa) was identified only to the Family Bufonidae. Type specimens are not available for study. Male worms are clearly cosmocercoids which belong to *Aplectana*, *Oxysomatium*, or *Raillietnema*. They are similar to and may be conspecific with *Aplectana hylambatis* (Baylis) or *A. chamaeleonis* (Baylis). SKRJABIN studied only one immature female worm which had a tail which is unusually short and blunt for a member of the Cosmocercinae. The reproductive system was not described. Since the original description, *O. dogieli* has been recorded only once from Kenya (SCHMIDT & CANARIS, 1968). These specimens have been examined (USNM 63123) and they belong to *A. chamaeleonis*. *O. dogieli* is designated a *species dubia*.

The type specimens of *Oxysomatium tibetanum* Baylis, 1927 [= *Aplectana tibetanum* (Baylis, 1927) Travassos, 1931 (2 ♂ on a permanent slide, BM 1923.8.28.92)] are poorly preserved. However, the numerous preanal papillae are rosettes and the species belongs in the genus *Cosmocercoides*. *C. tibetanum* (Baylis, 1927) n. comb. should be reexamined and compared with other *Cosmocercoides* spp. when well fixed specimens become available.

The females of *Oxysomatium baylisi* Walton, 1923 [= *Aplectana baylisi* (Walton, 1933) López-Neyra, 1947], are relatively small (2.2 mm long, width at vulva 175 µm), and the eggs are large (120 µm long). Since caudal papillae in males are simple in structure, the species belongs in the genus *Raillietnema* and it is herein designated *R. baylisi* (Walton, 1933) n. comb.

One type male (USNM 9382) of *Oxysomatium georgianum* Reiber, Byrd & Parker, 1940, has been examined. This species is synonymous with *Cosmocercoides dukae* (Holl, 1928).

A number of species originally assigned to *Aplectana* or synonyms of this genus have been at some time transferred to *Oxysomatium*. The present studies do not support any of these taxonomic changes.

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